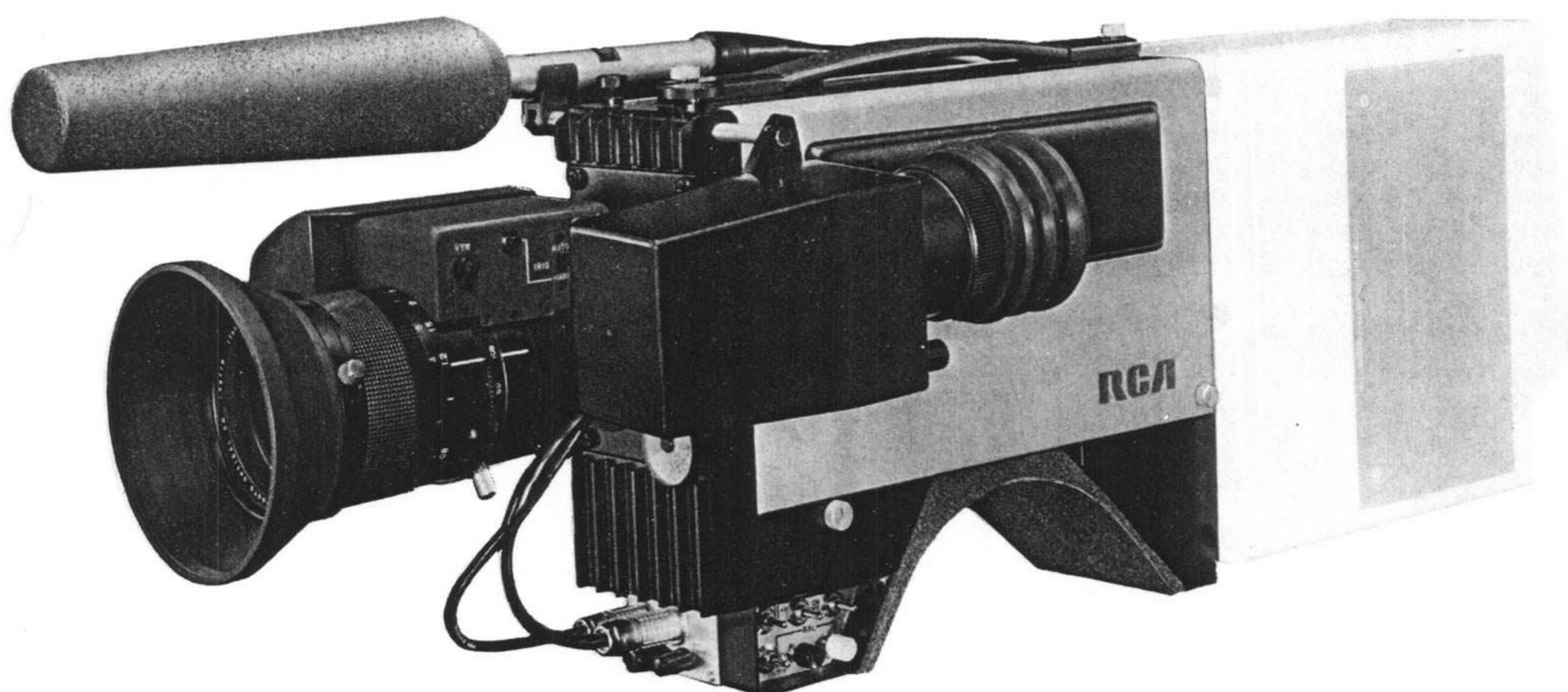




HAWKEYE Portable Color Camera, HC-1

- Uses new 1/2-inch pickup tubes—Saticon® or Plumbicon®—with performance equivalent to present 2/3-inch tubes
- New, totally sealed f/1.4 optical system with 6-position filter wheel
- Lightweight—lightest in its quality 3-tube class
- Superbly balanced; low center of gravity
- Automatic white balance, automatic black balance, and automatic flare control
- Automatic iris with variable metering area
- Long-term memory for balance setting
- Automatic Comet Tail Suppression (CTS)
- Self-contained, high-resolution viewfinder, with full range of metering indicators



New . . . From Mainframe to Cover

From its sturdy aluminum diecast mainframe to its one-piece space-age graphite epoxy cover, the HC-1 is a completely new camera design—an amalgamation of latest advances in optics; in video circuitry, and in pickup tube technology.

Designed as an integral element in the HAWKEYE Recording Camera System, it also provides full capability

for independent operation as a new generation portable color camera.

The camera is a tough lightweight—easy to handle and operate, and built to take the abuse portable cameras are frequently subjected to. It is also capable of producing superior, broadcast quality pictures under a wide range of operating environments.

Additional HC-1 Features

- Switchable +9 and +18 dB Gain Modes
- Contrast Compression
- Excellent resolution (600 lines limiting)
- 46 ftc Sensitivity is comparable to larger cameras, S/N ratio 52 dB NTSC, 50 dB PAL
- Rugged case sealed against dust, moisture and RFI
- Snap-in battery (Nicaid or Silver Zinc) in optimum position for balance
- Switch controls clustered for operator convenience
- Six-position filter wheel
- Designed for worldwide operating standards (NTSC, PAL-B, PAL-M, SECAM)

New High Performance 1/2-Inch Pickup Tubes
Using new design 1/2-inch pickup tubes, the HC-1 achieves resolution and sensitivity equivalent to that of present 2/3-inch tubes. The camera employs 1/2-inch electrostatically focussed (diode gun) Plumbicons® or 1/2-inch all-magnetic Saticons®. Precision tube and yoke assemblies and factory-collimation of each channel provide a degree of registration stability that was heretofore unattainable in the smaller tube formats. New preamp circuits in the camera contribute to its exceptionally high signal-to-noise ratio and sensitivity.

Excellent Colorimetry and Registration Stability
Precise colorimetry has been a traditional feature of RCA cameras. The HC-1 incorporates two design innovations that contribute to superior color matching and picture quality: an extremely precise dichroic prism and a new color encoder. The ultra-stable encoder has nothing to adjust or to misadjust—no pots or knobs. As an operational convenience, the HC-1 includes a long-term memory which stores camera balance settings.

Comet Tail Suppression

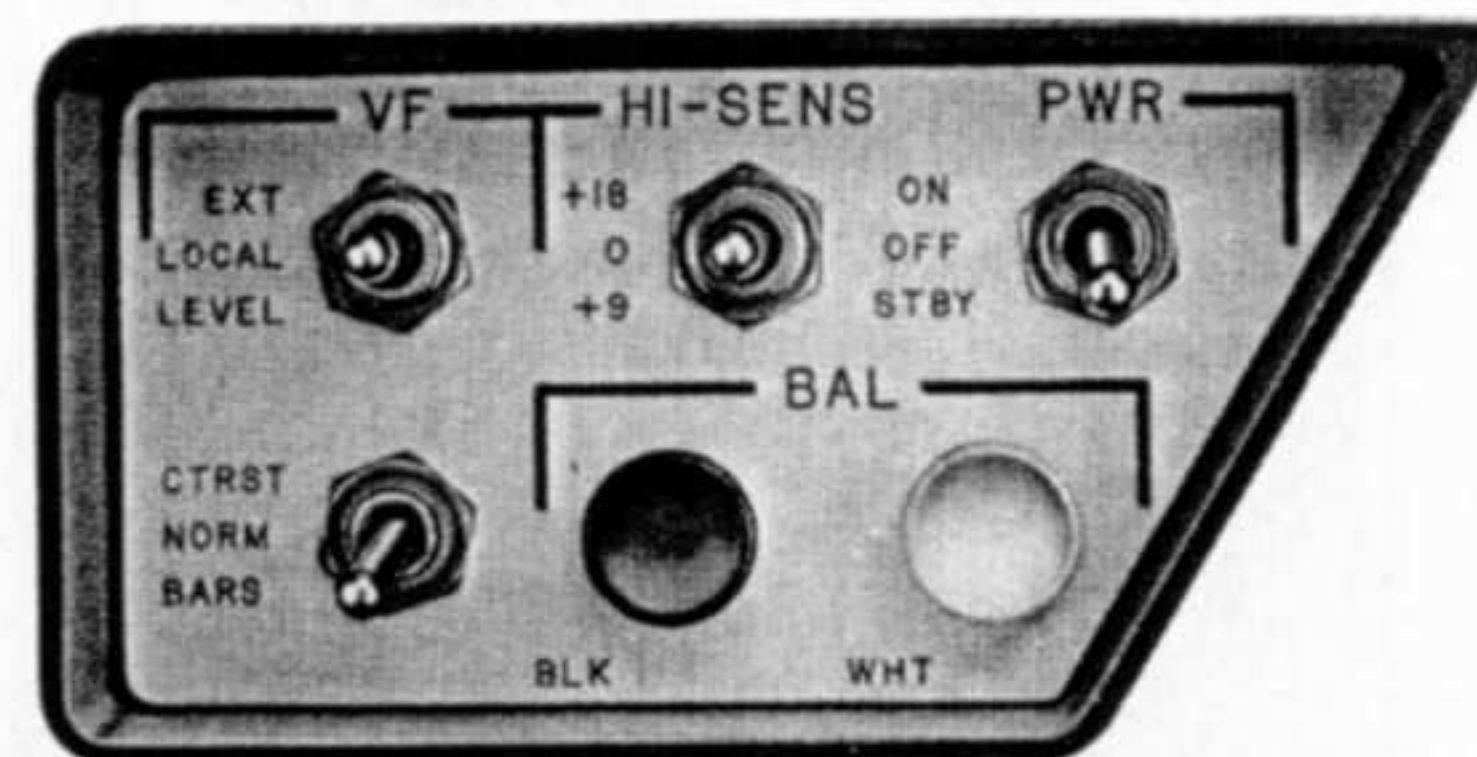
Comet Tail Suppression (CTS) circuitry in the HC-1 camera automatically suppresses overloads due to backlighting or specular reflections. Three independent circuits are employed to provide CTS for each channel. All preamps and CTS circuits are mounted on a common module, easily accessible for maintenance.

Switchable +9 and +18 dB Gain

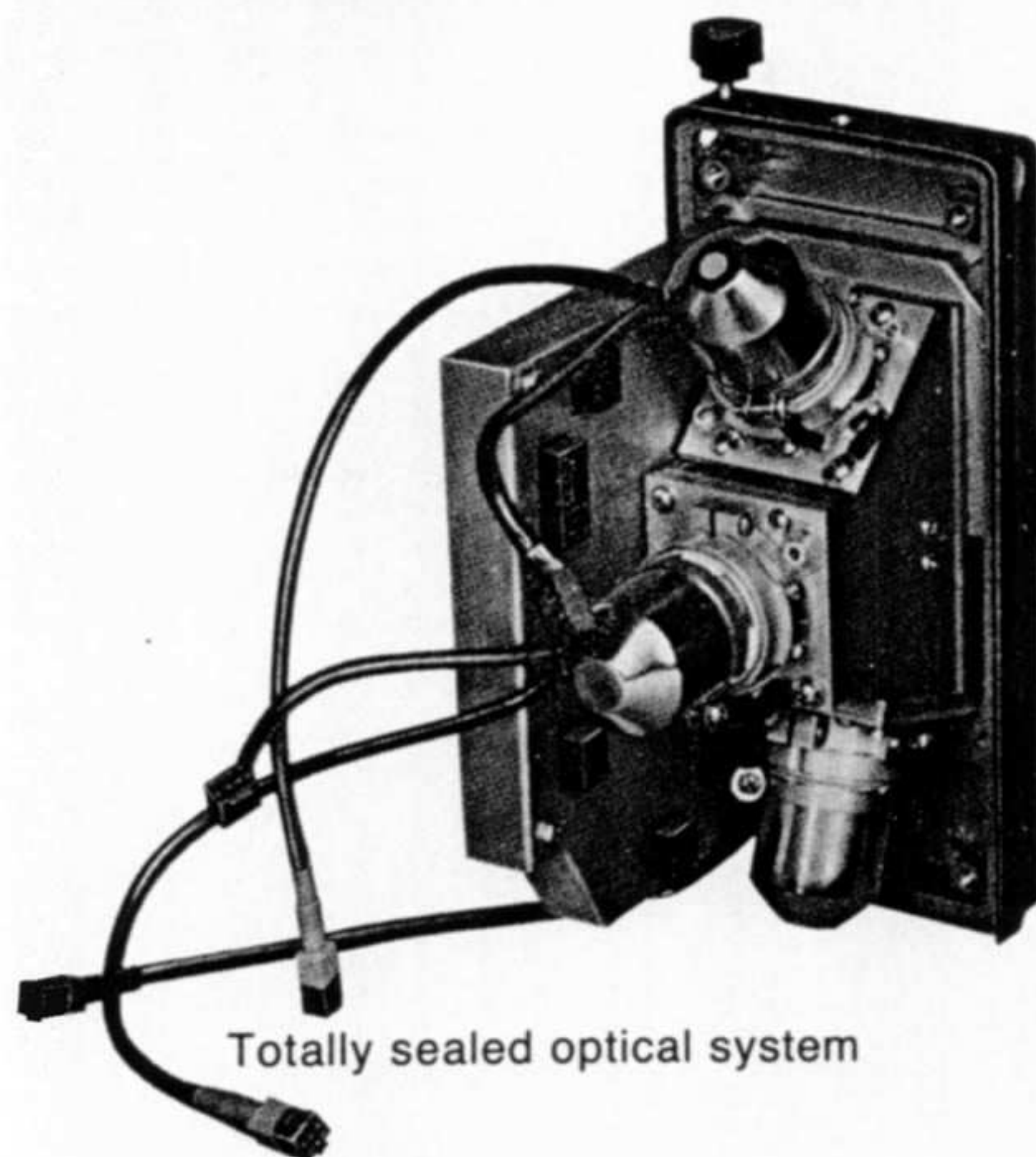
For obtaining optimum results when operating the camera in dim environments where extra light cannot be provided, two additional gain modes are available in the HC-1. Subcarrier trap filtering and other such techniques are employed in both modes to reduce noise subjectively, without significant reduction of picture resolution. Black balance is also stabilized in both modes. Switching in the high-gain modes results in an exceptionally useable picture down to 1 foot-candle.

New, Totally Sealed Optical System

A new, totally sealed optical system with an f/1.4 prism is used with the HC-1. The design of this system allows precise collimation of each channel at the factory for unprecedented registration accuracy in a small tube size.



Conveniently grouped controls



Totally sealed optical system



Snap-in Battery

The optical system is closed by a dustproof one-quarter wave quartz window, which reduces polarized glare. The entire optical assembly is easily removed from the camera for changing pickup tubes.

A Rugged Camera Package—Built for Survival

With its integrated design and one-piece cover, the HC-1 maintains full picture quality under extreme operating conditions. The camera meets specifications over a range of ambient temperatures, from -20° to $+50^{\circ}$ C (-4° to $+122^{\circ}$ F), and from 0 to 90% relative humidity.

The frame of the HC-1 is an aluminum die casting. The camera exterior is enclosed in a one-piece cover of graphite epoxy, a space age material which is extensively used in satellites and new aircraft. Graphite epoxy is lightweight; extremely durable, and flexes but does not break. The case can take a beating without looking beat.

Silver-impregnated gaskets seal the camera against dust, moisture and RFI. Operational switches and connectors are also sealed for protection.

Self-Contained, High Resolution Viewfinder

The viewfinder for the HC-1 is self-contained, including a high resolution 1.5" (diagonal) kinescope plus an array of useful information displays for the operator. LED displays in the viewfinder provide the following information:

- Peak indicators for two audio channels
- Low Battery
- Record Confidence (for VTR)
- Tape Ending Warning
- Warning (that a VTR function requires checking)
- Lens f-stop setting (four settings)
- Minutes of unrecorded tape remaining in videocassette (20-15-10-5)

The viewfinder is fully adjustable in three planes for convenient positioning, and is fitted with a flexible, optically focussed eyepiece, which provides correction from -4 to +2 diopter.

Six-Position Filter Wheel

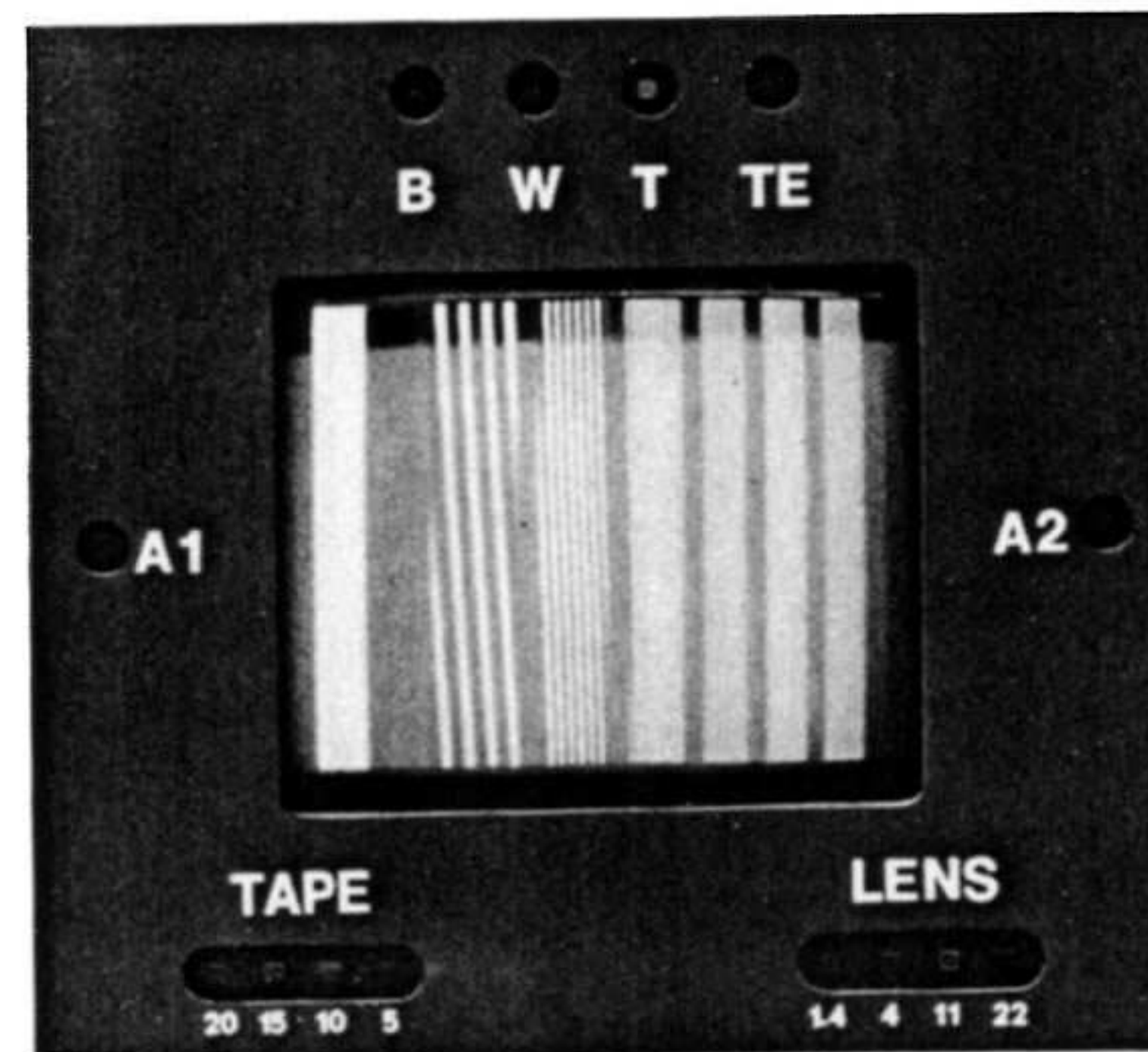
A knob located below and to the left of the lens rotates the filter wheel to any of six positions. A one-sixth turn moves the wheel to the next position. One position is the lens cap. Others are: Clear; Daylight; Daylight plus Neutral Density; 4.2 mm Star, and 6.2 mm Star. The Star filters provide camera operators with new capabilities for creative filmed production.

Snap-In Battery

The battery for the HC-1 powers both the camera and the Videocassette Recorder when used as a Recording Camera System. The battery snaps in and out for quick replacement. Batteries are available in various chemistries and operating times.

Sturdy, Plug-In Construction

Like its predecessor RCA portable color cameras, the HC-1 is designed for ease of operation and maintenance.



HC-1 Viewfinder

The interior electronics are mounted on eight module boards, seven of which are of the plug-in type. The remaining module carries the pre-amps and CTS circuitry and is easily accessed with probes. This arrangement separates the high and low voltage circuits. For added reliability and long-term performance, traditional wire harnesses and ribbon cable have been replaced with military type flex strips which are flexible and pre-shaped.

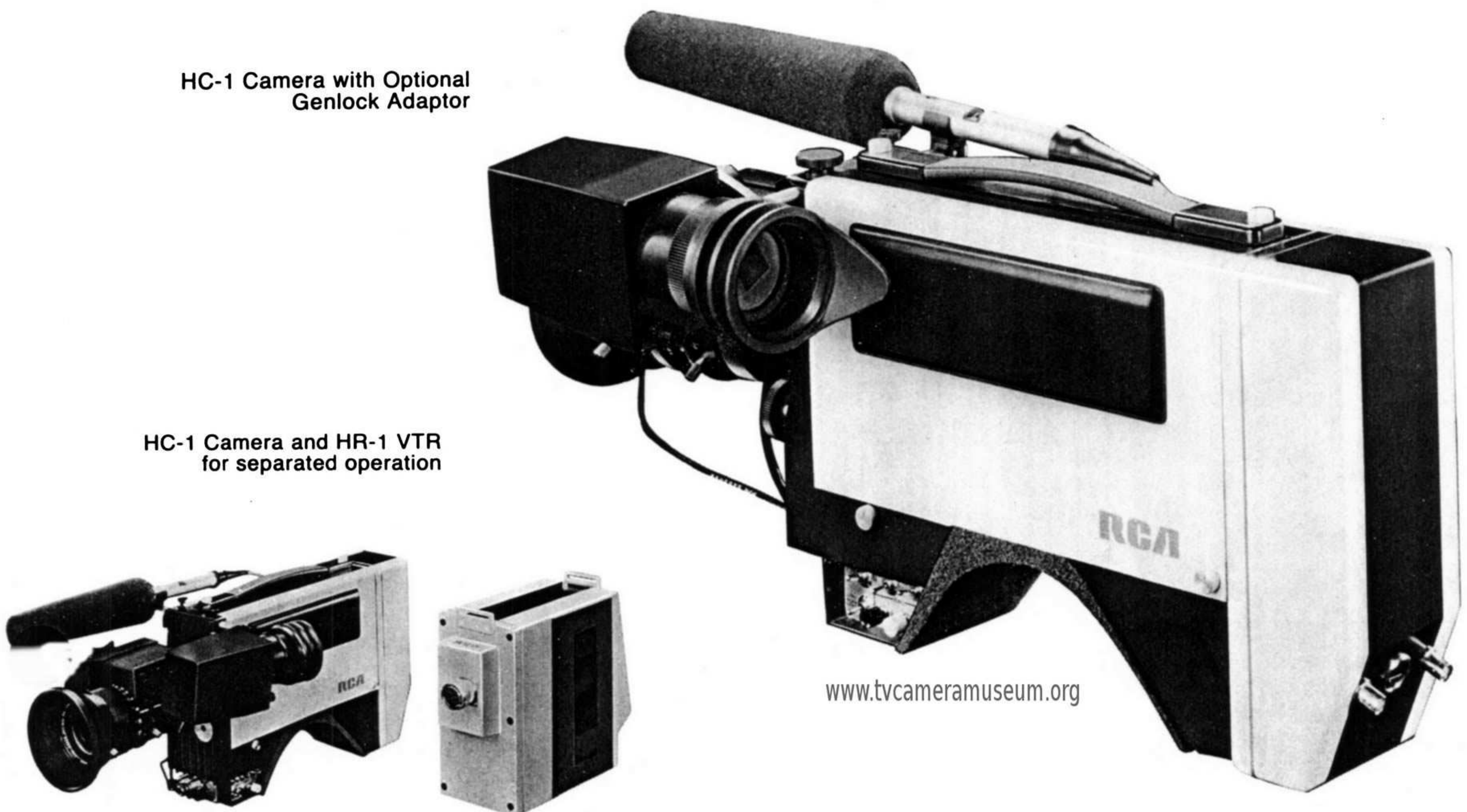
Optional Genlock Adaptor

An optional Genlock Adaptor is available for those applications where the HC-1 Camera is not directly coupled to the HR-1 VTR as a one-piece HAWKEYE Recording Camera System—or when the HR-1 Recorder is not required.

The Genlock Adaptor serves two functions: It physically closes the end of the HC-1 camera when the HR-1 Recorder is not attached, and it provides all necessary connectors for cables (to the separated HR-1 or to other equipment). In this mode, the genlock electronics module is not required. A battery clip on the rear of the adaptor allows an on-board battery to balance the camera. If genlocked operation is required, the genlock electronics module may be plugged into the adaptor.

HC-1 Camera with Optional
Genlock Adaptor

HC-1 Camera and HR-1 VTR
for separated operation



SPECIFICATIONS

SCAN STANDARDS

EIA	.....525/60
CCIR	.....625/50

COLOR STANDARDS

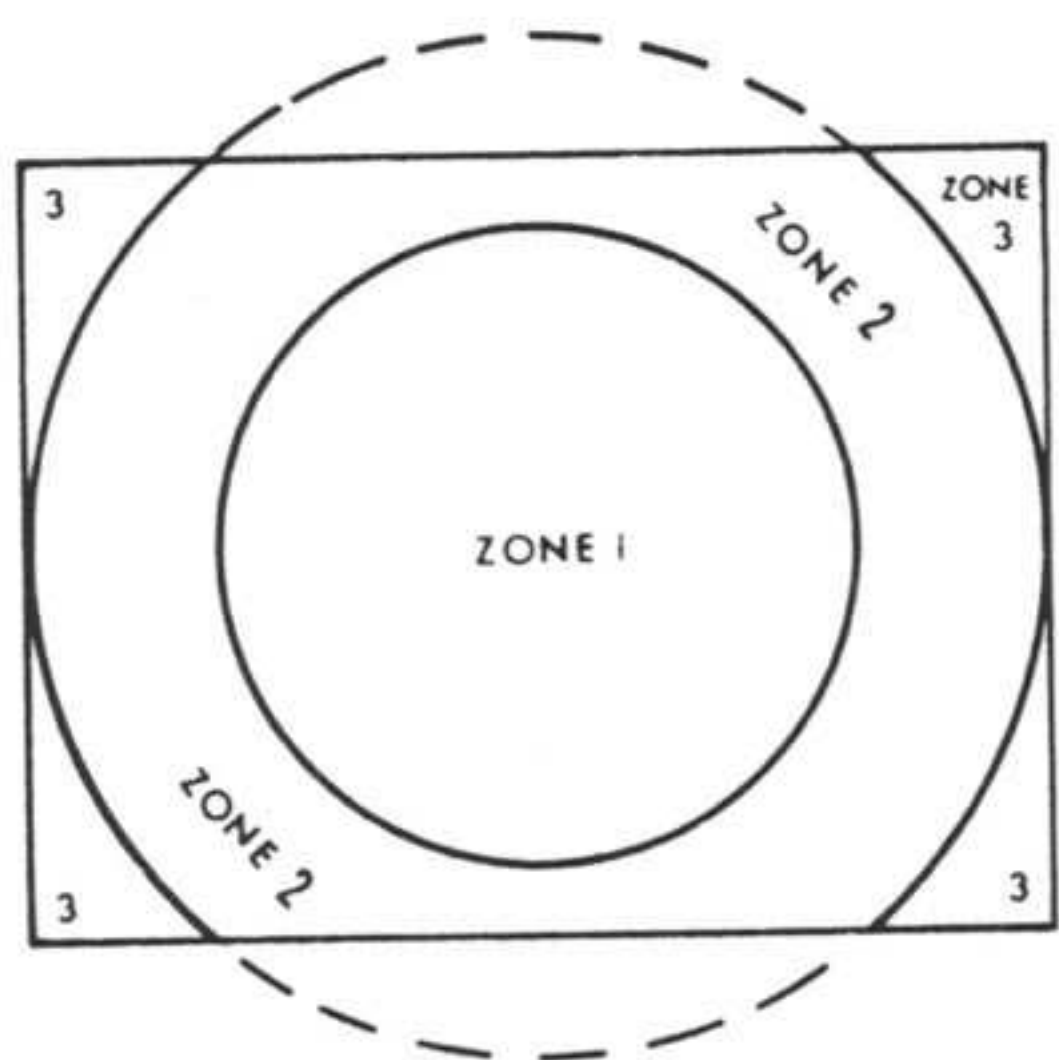
Types available for NTSC, PAL-B, PAL-M, SECAM-IIIB

RESOLUTION

	Saticon®	Plumbicon®
Green, 400 lines center, uncorrected	35%	30%
Limiting	600 lines	600 lines

REGISTRATION

Zone 1	.....0.1%
Zone 2	.....0.2%
Zone 3	.....0.3%



(Excludes Registration Deviation in Lens)

GEOMETRY $\leq 1.0\%$, Zone 1, 2 and 3
(Excludes Geometry Deviation in Lens)

SENSITIVITY

f/1.4, 60% Reflectance White, 3200°K Illumination:

Saticon®	.....70 footcandles (700 lux)
Plumbicon®	.....46 footcandles (460 lux)

SIGNAL-TO-NOISE RATIO

Camera adjusted to above sensitivity; Gamma = 1.0; aperture correction off; luminance only.

Rhode & Schwarz Meter:

525/60	.....52 dB
625/50	.....50 dB

POWER

Input12v DC nominal (11-17v)

Consumption:

Saticon®	.....23 W
Plumbicon®	.....18 W
(Including 1.5" VF; not including either HR-1 recorder or genlock adaptor)	

WEIGHT

Saticon®	.....9.6 lbs. (4.4 kg)
Plumbicon®	.....8.8 lbs. (4.0 kg)
(Including 1.5" VF; not including lens, or HR-1 recorder, or genlock adaptor)	

ENVIRONMENTAL

Ambient Temperature Limits-4° to +122°F
(-20° to +50°C)

Ambient Relative Humidity0 to 90% RH

Operational AltitudeTo 15,000 ft. ASL (3048 m)

STABILITYSpecifications are met over a range of $\pm 27^\circ\text{F}$ ($\pm 15^\circ\text{C}$) from the set-up ambient temperature

DIMENSIONS

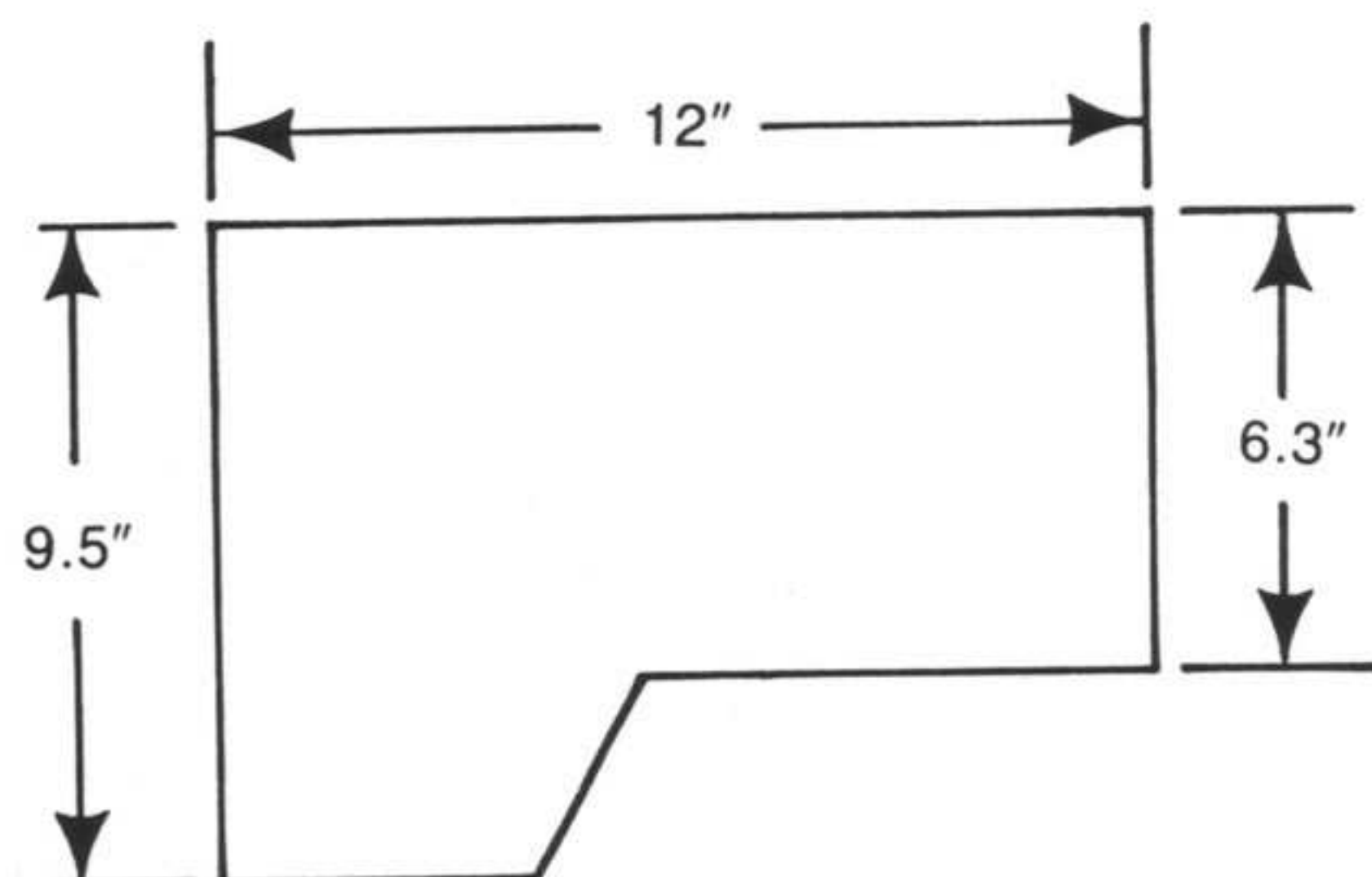
Length12" (30.5 cm)

Height:

Optics Area9.5" (24.1 cm)

Module Area6.3" (16.0 cm)

Width3.6" (9.1 cm)



RCA reserves the right to modify the design or change specifications without notice.